

HP Cloud Service Automation

Software Version: HP CloudSystem Enterprise 8 and HP Cloud Service Automation 4.00

HP CloudSystem Matrix Operating Environment Integration

Document Release Date: April 2014
Software Release Date: April 2014



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Introduction

This content demonstrates how to integrate HP Matrix Operating Environment (HP Matrix OE) with HP Cloud Service Automation (HP CSA) to provision a simple compute with support for multi-tenancy. This implementation can be leveraged to provision other software such as Oracle, SQL, WebSphere, and Weblogic on VMs that are created using HP Matrix OE compute provisioning.

The existing out-of-the-box HP Matrix OE flows were refactored to use generic provider types and resource offering category types. Custom HP Matrix OE flows will push custom resource offerings to particular service component servers, server groups, or both. The flow also populates the required resource offering parameters to service component servers, server groups, or both, based on the resource offering configuration.

The following use cases can be considered:

- Use HP Matrix OE to provision a VM in multi-tenancy and non-multi-tenancy environments.
- Use HP Matrix OE service templates to provision the service infrastructure with resource allocation like network selection, number of servers, number of CPUs, and memory size.

This content pack includes the step-by-step instructions, templates, and scripts necessary for the IT specialist to deliver a service that can be consumed by end-users.

About HP Matrix Operating Environment

HP Matrix OE is cloud management software for infrastructure as a service (IaaS) that increases agility and enables us to:

- Design and provision infrastructure services in minutes via a self-service portal.
- Optimize infrastructure with capacity planning and showback/chargeback.
- Protect service continuity with automated cost-effective failover.

System requirements

This implementation requires a fully configured and functioning environment as described in the following section. Each component must be verified to work individually and as a complete solution.

Supported versions

The following table shows the major components required to use this implementation.

Component	Version
HP Cloud Service Automation	4.00 and 4.01
HP Operations Orchestration	10.02 with the following content packs: OO-base-cp 1.0.142 or later OO-cloud-cp 1.0.133 or later OO-hp-solutions-cp 1.0.134 or later OO-virtualization-cp 1.0.129 or later OO-sa-cp 1.0.2 OO-sm-cp 1.0.2
HP Server Automation	9.13, 9.14, or 10.00
HP Matrix Operating Environment	7.2 and 7.3
HP CloudSystem Enterprise	8.0

See ["Additional resources" on page 32](#) for links to documentation for each of these products.

Configuration requirements

The following configuration must be completed and tested before you set up this implementation. See ["Additional resources" on page 32](#) for links to documentation and downloads.

- The HP CSA Cloud Service Management Console and Marketplace Portal must be configured. You must be able to successfully deploy the simple vCenter compute service that ships with HP CSA.
- If you are using HP CloudSystem Enterprise, all the necessary settings and configurations for HP CSA and HP Operations Orchestration must be completed before you can use this content.








Configuration steps

If you are using HP CloudSystem Enterprise, go to ["Configuring this content for HP CloudSystem Enterprise" on page 11](#) for specific configuration steps.

If you are using HP CSA, go to ["Configuring this content for only HP CSA" on page 15](#) for specific configuration steps.

Distribution file

The distribution file is csa-matrix-integrations-1.0.0.zip, and can be found on HP Live Network. You should extract this file in a temporary location on the HP CSA server. The contents of the distribution file are shown in the image below.

 install	File folder
 oo-flows	File folder
 service-designs	File folder
 service-offerings	File folder
 tools	File folder
 cp.properties	PROPERTIES File
 hp_eula.lic	LIC File

The distribution file contains jar files for HP Operations Orchestration flows that are used by integrations in the content pack. You will import the flows from oo-flows\oo10-csa-moe-CP-5.0.0.jar files as part of the configuration for all integrations. The install\enable.xml file contains entries you will need to run the HP CSA process definition tool for all integrations.

The tools folder contains a bulk import utility. These files are used to import the existing matrix content to HP CloudSystem Enterprise.

You should unzip this file into a temporary location on the server. The zip archive includes the following files:

File	Type	Description
SERVICE_DESIGN_CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0.zip	Service design	Service design to provision new services in HP Matrix OE (enhanced HP Matrix OE provider)
SERVICE_DESIGN_CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0_Template_Im.zip	Service design	Service design to enable the bulk import tool to import HP CloudSystem Matrix templates
SERVICE_OFFERING_Import_Matrix_Service_-_Admin-Only.zip	Service offering	For the non-multi-tenancy environment
SERVICE_OFFERING_Import_Matrix_Service_-_Single_Sign-On.zip	Service offering	For the multi-tenancy environment

Configuring this content for HP CloudSystem Enterprise

Complete the steps in this section if you are using HP CSA as part of a HP CloudSystem Enterprise installation.

Prerequisites

You must have completed the steps in the *CloudSystem 8.0 Installation and Configuration Guide* in *Appendix B, Configuring additional providers for CloudSystem Enterprise*.

Importing HP Operations Orchestration flows

HP Operations Orchestration flows are imported to HP CSA with the process definition tool. This tool creates a process definition for every imported flow. The process definitions are associated with a process engine, which corresponds to the HP Operations Orchestration system containing the imported flows. HP CSA uses the flows to perform lifecycle actions and submit delegated approvals.

You must have completed the following steps, which can be found in the *CloudSystem 8.0 Installation and Configuration Guide* (which can be found at www.hp.com/go/cloudsystem/docs), in *Appendix B: Configuring Additional providers for CloudSystem Enterprise*:

- Creating a database properties file
- Creating an Operations Orchestration input file
- Running the process definition tool

Tip: HP recommends that you generate sample database properties files and an input file. Use the following steps to create these files.

1. Unzip `csa-matrix-integrations-1.0.0.zip` to a location that is accessible to your HP CloudSystem Enterprise installation.
2. Log in as `csaouser` (password is `cloud`) to the HP Operations Orchestration Central console at `https://<IP of your foundation appliance>oo`.
3. Click **Content Workspace**.
4. Click **Deploy New Content**.
5. From the Deploy New Content window, browse to the location where you downloaded and unzipped the content pack.
6. Select `oo10-csa-moe-CP-5.0.0.jar` in the `oo-flows` folder and click **Deploy**.

The content should be successfully deployed. If there are errors on deployment see the Troubleshooting section.

Running the process definition tool

1. Open the HP Operations Orchestration input file that you generated when you completed the configuration of HP CloudSystem Enterprise. This file should be named HPOOInfoInput.xml and can be found in the following folder:

```
/ci/usr/local/hp/csa/Tools/ProcessDefinitionTool
```

2. Copy the contents of enable.xml, which is in the install folder in the location where you unzipped the downloaded archive.
3. Paste the contents near end of the HPOOInfoInput.xml file, before the </ooengine> closing tag and save the file.
4. Run the following command from the process definition folder:

```
sudo /ci/usr/local/hp/csa/openjre/bin/java -jar  
process-defn-tool.jar -d db.properties -i HPOOInfoInput.xml
```

Note: For additional information about the process definition tool, see *HP Cloud Service Automation – Process Definition Tool* in the Enterprise Information Library.

See "[Appendix A: HP Operations Orchestration flows](#)" on [page 28](#) for descriptions of the flows that are used by this integration.

Importing the service offerings

Use the Cloud Service Management Console to import a service offering.

To import the service offerings:

1. From the CloudSystem Console, select **Enterprise**.
2. From the **Tools** pane, select **Cloud Service Management Console**.
3. Navigate to **Offerings**.
4. Select **Import**.

The following service offerings, which can be found in the service-offerings folder in the location where you unzipped the downloaded archive, must be imported and published to enable importing HP CloudSystem Matrix into HP CSA:

- Service_Offering-CSL_Import_Matrix-Service_-_Single_Sign-On.zip
- Service_Offering-CSL_Import-Matrix_Service_-_Admin-Only.zip

5. Click **Import**.

See *HP CloudSystem Enterprise - Managing Matrix Services from CloudSystem Enterprise* for information about using the HP CloudSystem Matrix service offerings that were just imported.

hp Cloud Service Automation

admin

< Offerings

hp All Offerings

Matrix 7.x Import (v1.0)

Matrix 7.x Import (v1.0)

Import Matrix Service - Admin-Only

Imports an existing Matrix service into CSA using the provider credentials -- WARNING-- should only be published to catalog(s) of users you want to grant Administrative type access to Matrix.

Import Matrix Service - Single Sign-On

Imports an existing Matrix 7.x service into CSA using the authority of the username of the logged in CSA user for accessing the Matrix system. NOTE: Assumes Single Sign-On (e.g.shared LDAP) has been configured for CloudSystem Matrix and CSA.

Refresh

2 Total Items

Importing the service designs

Importing a blueprint archive also imports all related resources offerings. You do not need to import resource offerings separately. Complete the following steps for each service design archive listed above:

1. Log on to the Cloud Service Management Console as an administrator.
2. Click **Designs > Sequenced**.
3. Click **Import Service Design Archive** in the Service Designs tab.
4. Click ... and navigate to the service-designs folder where you unzipped the distribution file.
5. Select the ZIP file you want to import, then click **Open**.

The following service design enables the bulk import tool to import HP CloudSystem Matrix templates:


SERVICE_DESIGN_CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0_Template_Im.zip



The following service design provisions new services in HP Matrix OE (enhanced HP Matrix OE provider):

SERVICE_DESIGN_CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0.zip


6. Click **Import**.


You should check the subscriber options and make changes if necessary.


 Cloud Service Automation

admin  


< Sequenced Designs


 All Designs


 **Matrix Compute**



 **Matrix7.x Import (v...**


Refresh




 All Designs



 **CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0**
Provisions compute infrastructure with specified CloudSystem Matrix Template.

 **CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0_Service_Import**
Imports an existing Matrix 7.x service into CSA. This Service Design is used for both multi-tenant and non-multi-tenant mode.

Create

Import

Z Total Items

Now you should continue with the steps in ["Configuring offerings in HP CSA and HP CloudSystem Enterprise"](#) on page 19.

Configuring this content for only HP CSA

Complete the steps in this section if you are using HP CSA.

Importing HP Operations Orchestration workflows

Warning: You should make a backup or use a copy if you want to delete or modify a flow. The installer used to import the HP Operations Orchestration flows will not update a previously installed flow.

Note: If you previously imported flows for this content, then you do not need to import them again.

To import the flows, complete the following steps:

1. Log on to the HP CSA server.
2. Close HP Operations Orchestration Central. The import may fail if a Central session is running.
3. Open a command line window.
4. Change folders to the location where you extracted csa-matrix-integrations-1.0.0.zip. You should see oo10-csa-moe-CP-5.0.0.jar in the ooflows folder.
5. Enter the following command:

```
oosh.bat deploy --url https://<machine name>:8443/oo --user <HP OO admin user ID> --password <HP OO admin password> --files <path to downloaded OO-10.x jarfile>
```

Note: oosh.bat must be in the path.

6. After the command completes, log on to HP Operations Orchestration Central as an administrator at https://<server name>:8443/oo.
7. Expand the library to verify that the content has been installed in Library/CSA Content Pack/CSA3.2.

Running the process definition tool

A process definition tool is created when you install and configure HP CSA. This tool ensures that HP CSA can correctly locate the flows required for the implementation. You must run this tool after you import flows into HP Operations Orchestration.

When you installed HP CSA, you should have created an HP Operations Orchestration input file to be used by the process definition tool. See the *HP Cloud Service Automation Configuration Guide* if you can't find the file used in the following steps.

To run the process definition tool, complete the following steps:

1. Open the HP Operations Orchestration input file that you generated when you installed HP CSA. This file should be named HPOOInfoInput.xml and can be found in the following folder:

Windows: C:\Program Files\Hewlett-Packard\CSA\Tools\ProcessDefinitionTool

Linux: /usr/local/hp/csa/tools/ProcessDefinitionTool

2. Open enable.xml, which will be in the folder where you extracted the HP CloudSystem Enterprise 8 and HP Cloud Service Automation 4.00 distribution file.
3. Copy the contents of the file, or copy just the section for this integration.
4. Paste the contents near end of the HPOOInfoInput.xml file, before the </ooengine> closing tag and save the file.
5. Run the following command from the process definition folder:

```
java -jar process-defn-tool.jar -d db.properties -i HPOOInfoInput.xml
```

Note: If you are using a different database that is supported by HP CSA, see the *HP Cloud Service Automation Installation Guide* for instructions on using the process definition tool.

Importing the service offerings

Use the Cloud Service Management Console to import a service offering.

To import the service offerings:

1. From the CloudSystem Console, select **Enterprise**.
2. From the **Tools** pane, select **Cloud Service Management Console**.
3. Navigate to **Offerings**.
4. Select **Import**.

The following service offerings, which can be found in the service-offerings folder in the location where you unzipped the downloaded archive, must be imported and published to enable importing HP CloudSystem Matrix into HP CSA:

- Service_Offering-CSL_Import_Matrix-Service_- Single_Sign-On.zip

- Service_Offering_CSL_Import-Matrix_Service_-_Admin-Only.zip

5. Click **Import**.


See *HP CloudSystem Enterprise - Managing Matrix Services from CloudSystem Enterprise* for information about using the HP CloudSystem Matrix service offerings that were just imported.

The screenshot shows the HP Cloud Service Automation console interface. At the top, the header includes the HP logo, 'Cloud Service Automation', and a user profile 'admin' with a help icon. Below the header, a navigation bar shows 'Offerings' with a back arrow. The main content area is divided into a left sidebar and a main panel. The sidebar has 'All Offerings' and 'Matrix 7.x Import (v1.0)' (selected). The main panel displays the 'Matrix 7.x Import (v1.0)' offerings, including 'Import Matrix Service - Admin-Only' and 'Import Matrix Service - Single Sign-On'. The 'Admin-Only' offering has a description: 'Imports an existing Matrix service into CSA using the provider credentials -- WARNING-- should only be published to catalog(s) of users you want to grant Administrative type access to Matrix.' The 'Single Sign-On' offering has a description: 'Imports an existing Matrix 7.x service into CSA using the authority of the username of the logged in CSA user for accessing the Matrix system. NOTE: Assumes Single Sign-On (e.g. shared LDAP) has been configured for CloudSystem Matrix and CSA.' At the bottom, there is a 'Refresh' button, a settings gear, 'Create' and 'Import' buttons, and a status '2 Total Items'.

Importing the service designs

Importing a blueprint archive also imports all related resources offerings. You do not need to import resource offerings separately.

Complete the following steps for each service design archive listed above:

1. Log on to the Cloud Service Management Console as an administrator.
2. Click **Designs > Sequenced**.
3. Click **Import Service Design Archive**  in the Service Designs tab.
4. Click ... and navigate to the service-designs folder where you unzipped the distribution file.
5. Select the ZIP file you want to import, then click **Open**.

The following service design enables the bulk import tool to import HP CloudSystem Matrix templates:


SERVICE_DESIGN_CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0_Template_Im.zip



The following service design provisions new services in HP Matrix OE (enhanced HP Matrix OE provider):

SERVICE_DESIGN_CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0.zip


6. Click **Import**.


You should check the subscriber options and make changes if necessary.


 **Cloud Service Automation**

admin  


< Sequenced Designs


 **All Designs**


 **Matrix Compute**



 **Matrix 7.x Import (v...**


Refresh




 **All Designs**

Search 

 **CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0**
Provisions compute infrastructure with specified CloudSystem Matrix Template.

 **CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0_Service_Import**
Imports an existing Matrix 7.x service into CSA. This Service Design is used for both multi-tenant and non-multi-tenant mode.

Create

Import

Z Total Items

Now you should continue with the steps in ["Configuring offerings in HP CSA and HP CloudSystem Enterprise"](#) on the next page.

Configuring offerings in HP CSA and HP CloudSystem Enterprise

If necessary, resource categories that are referenced in a service design will be automatically created when the service design archive is imported.


Adding providers

This implementation requires the following resource providers:

Provider name	Service access point
HP Matrix Operating Environment	https://<MOE Hostname>:51443/hpio/controller/soap/v4

These providers must be created in HP CSA. The table above provides typical service access points; you may need to change them to reflect your environment.

Complete the following steps for each provider in the table above:

1. Log on to the Cloud Service Management Console as an administrator.
2. Click **Resources**.
3. Select a provider type in the panel on the left.
4. Click **Create New Provider**  in the toolbar on the Providers tab in the central panel.
5. Complete the steps to create a new provider.

You should see the new resource providers on the Providers tab.

Providers

By Type By Environment



Amazon EC2

HP 3PAR

HP Cloud OS

HP Database and Middleware Auto...

HP Matrix Operating Environment

HP Network Automation

HP Server Automation

HP SiteScope

hp HP Matrix Operating Environment Providers
HP Matrix Operating Environment

Providers



Search

Display Name	Description	Service Access Point	# Offerings	# Envir...	# Reso...
Matrix	Matrix Provider for the Cloud domain environment	https://192.168.146.1:51443/hp	1	0	0

Providers

By Type By Environment



Amazon EC2

HP 3PAR

HP Cloud OS

HP Database and Middleware Auto...

HP Matrix Operating Environment

HP Network Automation

HP Server Automation

HP SiteScope

HP UCMDB

Openstack

VMware vCenter

hp Matrix Provider

Matrix Provider for the Cloud domain environment

Summary

Offerings

Environments

Resource Pools

Properties



Properties

Display Name

Matrix

Description

Matrix Provider for the Cloud domain environment

Type

HP Matrix Operating Environment

User ID

cloud\administrator

Service Access Point

https://192.168.146.1:51443/hpio/controller/soap/v4

Availability

Enabled

Associating resource offerings with providers

New resource offerings that were imported with the design archive must be associated with providers. You must associate the resource offerings and providers listed in the following table:

Resource offering	Provider
CSL_RO_MOE_MANAGE_INFRASTRUCTURE_COMPUTE_V1.0	HP Matrix OE
CSL_RO_MOE_IMPORT_INFRASTRUCTURE_COMPUTE_V1.0	HP Matrix OE

Complete the following steps for each resource offering listed in the table above:

1. Log on to the Cloud Service Management Console as an administrator.
2. Click **Resources**.
3. Click **Offerings** at the bottom of the panel on the left.
4. Select HP Matrix Operating Environment in the panel on the left.
5. Select the offering in the Display Name column on the Offerings tab.
6. Select the Providers tab.
7. Click **Associate** + to display a list of providers available.
8. Select the Matrix provider and click **Associate**.

[illegible]

Creating the service offering

A service offering must be created in HP CSA before subscribers can request services based on this service design.

Complete the following steps:

1. Log on to the Cloud Service Management Console as an administrator.
2. Click **Offerings**.
3. Click **Create**. The Create New Service Offering dialog will open.
4. Enter a name for the new service offering. This is the name of the offering that will be visible to the subscribers of this service.
5. For the Matrix template import design, select CSL_BP_MOE_INFRASTRUCTURE_COMPUTE_V1.0_Template_Import.
6. Click **Create**.

After the offering is created, you can modify the pricing information, associate documents, or modify the subscriber options.

Configure subscriber options in HP CSA

The subscriber options listed in the following table should be updated.

Subscriber option name	Description
Template Reference	MOE template name. This could be made invisible if administrator chooses to do so.
Enable Multi-Tenant Support	True for multi-tenant support, false for non-multi-tenant support. This must be made invisible by administrator.

To edit the options, complete the following steps:

1. Click **Offerings**.
2. Select the offering and then select the Options tab.
3. Update the appropriate subscriber option.

Publishing the service offering in the default catalog

Important: You should only publish the new HP Matrix OE deployment service offering in the default catalog. Instructions to create and publish the HP Matrix OE service import can be found in *Managing Matrix Services from CloudSystem Enterprise*.

HP CSA is installed with a default global catalog. When you publish a service offering in this global catalog, that service offering will be visible in every organization's Marketplace Portal.

Complete the following steps:

1. Log on to the Cloud Service Management Console using an account with administrator privileges
2. Click **Catalogs**.
3. Select **Global Shared Catalog** in the panel on the left.
4. Select **Published Offerings** in the central panel.
5. Click **Add Offering**.
6. Select the service offering you created in the previous steps and click **Select**.
7. Select the category under which this service offering should appear in the Marketplace Portal.
8. Click **Add**.

Subscribing to the service

Complete the following steps to order the service:

- 1. Log in to the Marketplace Portal.
- 2. Select the Browse Catalog tab.

The offerings available in this catalog will be displayed.

- 3. Click the service offering you want to order.
- 4. Enter a name for the subscription.
- 5. Enter options as required for the subscription.
- 6. Click **Request Now**.

Open the Subscriptions tab to monitor the status of your subscription.

The following public actions are available for an active subscription:

Action	Level
PowerCycle Service	Service
Power Off Service	Service
Power On Service	Service
Add Server	Server Group
Add Disk	Server Group
Power On Server	Server
Power Off Server	Server
PowerCycle Server	Server
Flex CPU	Server
Flex Memory	Server
Remove Server	Server
Activate Server	Server
Deactivate Server	Server



Matrix Compute
Simple System
Provisions compute infrastructure with specified CloudSystem MatrixTemplate
Published on Mar 28, 2014 4:34:53 PM

\$0.00
\$0.00 /y

Show More Details is **On**



CloudSystem Matrix
CloudSystem Matrix Options

☒ Service Offering Options Add \$0.00 | \$0.00 /m

Specify Appropriate Service Offering Options

Matrix Template Name

MOE Template Reference

WIN2008R2 or RHEL63-x64

☐ Enable Multi-Tenant Support

Total Costs **\$0.00 | \$0.00 /y**

Checkout



Order Information

Provide a meaningful name for your service. This name will be used as the primary listing method of your subscribed services.

Subscription Name

Matrix Compute - Demo

Description

Lab Demo



Group Ownership is **Off**



Subscription Period

☐ Recurring Subscription ☒ Term Subscription

Start Date

3/28/14

[Pick Date](#)

End Date

3/28/15

[Pick Date](#)



Attach Documents

[Attach File](#)

Summary

The service configuration options you've chosen. You can always make changes before checkout.



Matrix Compute
Published on Mar 28, 2014 4:34:53 PM

Your Configuration

Service Offering Options

Matrix Template Name (WIN2008R2)

[Make Changes](#)

Total Costs **\$0.00 | \$0.00 /y**

[Submit Request](#)

Canceling a subscription

You can only cancel a subscription if its service instance has one of the following statuses:

- Online
- Reserved
- Modification Failed
- Failed

To cancel a subscription

1. Click **Subscriptions**.
2. Locate the subscription you want to cancel.
3. Click **Delete** to the lower right of the subscription.
4. Confirm that the status for the subscription you canceled is now Canceled.

Note: A request to cancel a subscription is approved automatically, so the request has the status of Approved on the Requests tab.

Known issues

- VMware Tools will not be installed on the created VM through HP Matrix OE.
- QXCR1001341811: CSL:Matrix OE is returning inconsistent response(io xml)when service details requested.

HP Insight Orchestration has an intermittent issue in returning incorrect service XML for a SOAP call, due to which some public actions may fail at times. This will be fixed in the next patch kit for individual versions of HP Matrix OE.

- QXCR1001341827: CSL:IO XML returning wrong HOST name & it happens when we add windows server

Appendix A: HP Operations Orchestration flows

The following sections describe the flows used in this integration, including its input and output parameters.

Add Custom Type Resource Binding subflow

This flow adds the custom based resource offering and the properties attached to the infrastructure service component to its child server and server group components.

If the value for the resources offering property `roServiceComponent` is set to `SERVER`, `SERVER_GROUP`, or `BOTH`, then this flow will add the custom type resource and populate the infrastructure service component properties for the server, server group, or both.

Type	Parameter name	Description
input	srvList	HP CSA component ID for one or more server (delimited by the pipe character) on which the custom resource binding is to be created.
input	srvGrpList	HP CSA component ID for one or more server group (delimited by the pipe character) on which the HP Universal CMDB resource binding is to be created.
input	userIdentifier	HP CSA user ID
input	customResProviderId	HP CSA resource provider ID for the custom provider, to be used by the custom resource binding on the server and server group components.
input	customOffrName	Name of the custom offering to be attached to the server and server group components.
input	customBindingOrder	Resource binding order for the custom offering to be attached to the server and server group components.
input	customOffrID	Offering id of the custom resource offering.
input	infraComponentID	Infrastructure component ID.

Appendix B: Provisioning applications using HP Matrix OE

You can use this implementation to provision other software such as Oracle, MS SQL, WebSphere, or Weblogic on a VM that is created using MOE Compute Provisioning. You must attach the compute provisioning resource offering `CSL_RO_MOE_MANAGE_INFRASTRUCTURE_COMPUTE_V1.0` to the resource binding of the infrastructure service component with binding order 1. You must also define the component properties in the infrastructure service component and initialize them with a value or a source binding if the subscriber is expected to enter the value.

This process includes the following steps:

1. We have to attach the Compute provisioning resource offering `CSL_RO_MOE_MANAGE_INFRASTRUCTURE_COMPUTE_V1.0` to the resource binding of infrastructure service component with binding order 1.
2. Define all the component properties in the infrastructure service component and initialize with value or source binding if the subscriber has to enter the value while subscribing.
3. If you have attached a custom resource offering (resource offering other than HP Server Automation, HP SiteScope, and HP Universal CMDB) to infrastructure service component, then you must define two resource offering properties `roServiceComponent` and `roPropertiesRequired` in that custom resource offering.
4. The values for property `roServiceComponent` can be `SERVER`, `SERVER_GROUP` or `BOTH`. The values for property `roPropertiesRequired` can be list of Infrastructure service component properties separated by comma.

The lifecycle of the custom resource offering will be executed for the infrastructure service component whether or not the `roServiceComponent` and `roPropertiesRequired` properties are defined and initialized.

The following table shows the different types of configuration available for a custom resource offering:

ROSERVICECOMPONENT property value	ROPROPERTIESREQUIRED property value	Result
Not configured	Not configured	The resource offering lifecycle will not be executed for any of the servers and server group components and none of the infrastructure service component properties will be pushed into any of the servers and server group components.


Not configured	Configured	The resource offering lifecycle will not be executed for any of the servers and server groups' components and none of the infrastructure service component properties will be pushed into any of the servers and server group's components.
Configured	Not configured	The resource offering lifecycle will be executed for configured component and none of the infrastructure service component properties will be pushed into any of the servers and server groups components.
Configured with value SERVER	Configured with value dbName,instanceName	The resource offering lifecycle will be executed for all server components and the infrastructure service component properties dbName and instanceName will be pushed into all server components.
Configured with value SERVER_GROUP	Configured with value dbName, instanceName	The resource offering lifecycle will be executed for all server group components and the infrastructure service component properties dbName and instanceName will be pushed into all server group components.
Configured with value BOTH	Configured with value dbName, instanceName	The resource offering lifecycle will be executed for both for all servers and server groups components and the infrastructure service component properties dbName and instanceName will be pushed into both in all servers and server groups components.

Adding the supported category types

The service design may use a custom resource offering from a different category type, such as Application, Compute, Network, Security, Storage, Database, Monitoring, or Information. You will need to add them in the supported categories of component type server and server group depending on the values provided in the roServiceComponent property of the resource offering.

Component Type	Description
Server	Server component
Server Group	Server group component

Complete the following steps for each component type listed above:

1. Click **Components**.
2. Select a component type in the central panel.
3. Select the Constraints tab in the panel on the left.
4. Click Resource Categories in the panel on the left.
5. Click  in the bottom of the central panel. A dialog will open that lists the supported category types.
6. Select a supported category type from the dialog.
7. Click **Add**.

Additional resources

The HP Live Network Portal can be found at hpln.hp.com/solutions.

HP software product manuals and documentation for the following products can be found at support.openview.hp.com/selfsolve/manuals. You will need an HP Passport to sign in and gain access.

CloudSystem Enterprise documentation is available at www.hp.com/go/cloudsystem/docs.

Documentation for the Matrix Import Toolkit for CloudSystem Enterprise 8.0 can be found at hpln.hp.com/node/145/contentfiles.

HP CloudSystem Matrix documentation can be found at hp.com/go/matrix.

HP Matrix Operating Environment documentation can be found at hp.com/go/matrixoe.

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Feedback on HP CloudSystem Matrix Operating Environment Integration (Cloud Service Automation HP CloudSystem Enterprise 8 and HP Cloud Service Automation 4.00)

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